NOTES.

THE lists of New Year Honours include three new peers, seven privy councillors, ten baronets, and forty knights. Among the honours conferred we notice the following:—*Baronet:* Mr. R. C. Forster, who is known in the scientific world by his generous gifts to the new chemical laboratories at University College, London. *Knights:* Prof. W. F. Barrett, F.R.S.; Dr. John H. Benson, president of the Royal College of Physicians, Ireland; Dr. Robert J. Collie, medical examiner to the London County Council and chief medical officer to the Metropolitan Water Board; Mr. J. Mackenzie Davidson, distinguished for his researches in X-ray work; Prof. Henry Jones, professor of moral philosophy in the University of Glasgow; Dr. A. B. Kempe, F.R.S., treasurer of the Royal Society; Dr. H. A. Miers, F.R.S., principal of the University of London since 1908; Dr. G. H. Savage, a well-known authority on mental diseases; Prof. E. B. Tylor, F.R.S., emeritus professor of anthropology in the University of Oxford; Dr. Bertram C. A. Windle, F.R.S., president of University College, Cork, which, until the Irish Universities Act of 1908, was designated Queen's College. *Companion of the Order of the Bath:* Dr. A. Newsholme, medical officer of the Local Government Board. *Companion of the Order of St. Michael and St. George:* Lieut.-Colonel David Prain, F.R.S., director of the Royal Botanic Gardens, Kew.

THE recent decision of Sir Samuel Evans (the President of the Admiralty Court) and Trinity Masters in the case of the *Hawke* and *Olympic*, that the accident was due to the influence of the latter on the former owing to the *Olympic* taking a too large turn coming into Spithead, is very interesting. The experiments carried out at the William Froude Tank at Teddington played an important part in the case, and have thrown considerable light on a subject which must necessarily come into prominence as the size and speed of vessels increase. These experiments took the form of the running of scale models of the *Hawke* and *Olympic* in the main experiment tank. Part of this had been fitted with a false bottom to give in the experiments the shallow-water effect that would be produced on the ships by the depth of water in which they were steaming. The models were run at the same speed, corresponding to eighteen knots for the *Olympic*, and at a fixed distance apart laterally, corresponding to 100 yards for the ships. In these circumstances, with the *Hawke* model quite free to move sideways or angularly, the experiments clearly demonstrated that in the shallow water the larger model did exert considerable influence upon the smaller, and that with the *Hawke* model in those positions where this influence became one of attraction at the bow and repulsion at the stern, these forces could not be overcome by the rudder even with considerably greater helm than the 15° which the *Hawke* had at the time of the accident. The canting tendency which occurs when one ship has partially passed another is far more difficult to overcome than the sheering (or bodily movement) tendency which occurs when the vessels are broadside to each other, and unless the overtaking vessel is going relatively fast enough to run ahead there is every chance of a collision.

ON the night of December 31, 1911, a large mass of the chalk cliff fell into the sea at Abbottscliff, west of Shakespeare Cliff, between Dover and Folkestone. The fallen rock now extends as a platform stretching 400 yards seaward, with a breadth of about 200 yards and a height in places of 30 feet. The aspects of the cliff and shore have been entirely altered. The noise of the fall appeared to the coastguard like the firing of heavy guns, and the inrush of this vast bulk of rock into the sea produced so much effect upon the height of the water that it caused considerable disturbance to the shipping in Folkestone Harbour. Falls in the winter time are by no means uncommon on this part of the coast. The outline of Shakespeare Cliff was much modified by an immense fall in 1899; others took place in the month of January 1905, 1907, and 1909. It is possible that the long drought of the past summer, followed by the heavy rains of the latter part of the year, may have hastened the recent landslip. The gradual desiccation of the ground has been very marked in many places, and it has had a serious effect on the stability of numerous buildings owing to the shrinking of the foundation soil through loss of moisture. The chalk cliffs have no doubt been affected in the same way; joints have been opened to an extent that would not occur in a normal year, thus providing more channels for the recent rains. Though the chalk cliffs present so uniform an appearance when observed from a distance, they are formed, in reality, of layers of variable physical character, a circumstance which greatly facilitates their downfall.

ONE of the great founders of the science of physical anthropology has passed away in the person of Dr. Paul Topinard. He was a pupil, colleague, and friend of the illustrious Broca, "a man who," Dr. Beddoe said, "positively radiated science and the love of science; no one could associate with him without catching a portion of the sacred flame. Topinard has been the Elisha of this Elijah." Topinard made valuable investigations on the living population of France, and many researches in various other branches of physical anthropology. In 1876 he published a relatively small book, "L'Anthropologie," for which he obtained a gold medal from the Faculté de Médecine de Paris, and a second prize from l'Institut; it was translated into English, and published in the Library of Contemporary Science in 1878. This book is packed with information, as it contains numerous measurements and an exposition of methods of investigation; it has long been a guide for students and a manual of reference for travellers and others. In 1885 he published his "Eléments d'Anthropologie générale," a monumental work of 1157 pages, being the substance of his courses of lectures and laboratory instruction for eight years in the École d'Anthropologie. It is not the compilation of a mere library student, but is permeated by the author's personality and contains the results of his very numerous and varied researches; in it he broke free from the traditions of the monogenists and polygenists, and incorporated the new ideas spread by Darwin and Haeckel. This great work exhibits his vast erudition and untiring energy, and it is indispensable for all physical anthropologists. It is needless to add that Dr. Topinard has gained honours in his own country and the homage of his colleagues all over the world.

WE regret to see the announcement, made in a Reuter report from Paris, that Mme. Curie is seriously ill with appendicitis, and has been taken to a hospital to undergo an operation.

PROF. ARMIN BALTZER, Berne, and Dr. Emmanuel de Margerie, Paris, have been elected foreign members of the Geological Society of London. Prof. Charles Depéret, Lyons, and Prof. Arvid Gustaf Högbom, Upsala, have been elected foreign correspondents of the society.

THE extension of the Horniman Museum, Forest Hill, consisting of a lecture hall and a new library, the gift of Mr. E. J. Horniman, son of the donor of the museum, will be opened on Saturday, January 27, by Sir Archibald Geikie, K.C.B., president of the Royal Society.

Mr. A. F. Hallimond has been appointed to the assistant curatorship of the Museum of Practical Geology, in succession to Mr. W. F. P. McLintock, who has been transferred to the geological department of the Royal Scottish Museum, Edinburgh.

Dr. Gilbert T. Morgan, assistant professor of chemistry at the Imperial College of Science and Technology, South Kensington, and junior hon. secretary of the Chemical Society, has been appointed to the chair of chemistry at the Royal College of Science, Dublin, rendered vacant by the retirement of Sir Walter Noel Hartley, F.R.S.

At the ordinary scientific meeting of the Chemical Society on Thursday, December 21, 1911, it was announced by the president, Prof. Percy F. Frankland, F.R.S., that the council had awarded the Longstaff medal for 1912 to Dr. H. Brereton Baker, F.R.S., and that the presentation of the medal would be made at the annual general meeting to be held on March 28.

The Selborne Society has arranged a Christmas holiday lecture for children, to be given in the Theatre at Burlington Gardens on Monday, January 8, by Mr. Wilfred Mark Webb. Lord Montagu of Beaulieu will preside, and the subject will be "Punch and Judy." Tickets may be obtained through members or from the offices of the society at 42 Bloomsbury Square, London, W.C.

A scare has been caused in Berlin by the occurrence of a mysterious "epidemic." Within a couple of days or so more than a hundred individuals were attacked with serious illness presenting the same symptoms, and some sixty or thereabouts have died. The victims seem to be of the poorest class, and the outbreak is not confined to one locality. The information to hand is scanty, but suggests that the condition is one of ptomaine poisoning, or of epidemic food poisoning, due to the ingestion of unsound food. The latest report states that certain spirits sold for consumption have been found to contain a large proportion of methylated spirit, and attributes the illness to this, but is hardly credible, unless German methylated spirit is very different from ours.

A summary, issued by the Meteorological Office, of the weather for 1911 for the several districts of the United Kingdom, obtained from the Weather Reports for the fifty-two weeks ended December 30, shows that the mean temperature was above the average over the whole of the United Kingdom, and in most of the English districts the excess amounted to about 2°. The range of temperature was everywhere large, being 84° in the Midland counties, 81° in the east of England, and 80° in the south-east of England. The maximum shade temperature exceeded 90° in all the English districts, and was 98° in the Midland counties, whilst the minimum temperatures were below 20° over the entire kingdom, except in the Channel Islands. The rainfall for the year was generally deficient, but the heavy rains which fell in October, November, and December have everywhere lessened the deficiency, whilst in the south-east of England and in the Channel Islands the aggregate rainfall was in excess of the average. The largest measurement of rain for any district for the year was 51·04 inches, for the north of Scotland, and the largest in any English district was 36·82 inches, for the south-west of England. The least measurement was 22·04 inches, for the Midland counties, which is 4·20 inches less than the average for the past twenty-five years. In the north of Ireland the deficiency is 4·75 inches. In the south-east of England, which district embraces London, the rainfall for the year was 28·05 inches, which is 1·14 inches more than the normal. The rainy days were fewer than the average everywhere, except in the south of Ireland. The greatest frequency of rain was 227 days, in the north of Scotland; the least 159, in the south-east of England. The duration of bright sunshine was largely in excess of the average over the entire country; the greatest excess in any district is 336 hours, in the south-east of England. The absolutely greatest duration of sunshine was 2028 hours, in the Channel Islands, and the least 1257 hours, in the north of Scotland. In the south-east of England the sun shone for 1933 hours.

The congress of the Royal Sanitary Institute will this year be held at York on July 29–August 3. The Archbishop of York will be the president of the congress. The business will be divided among ten sections, presided over as follows:—A, sanitary science and preventive medicine, Sir Shirley F. Murphy; B, engineering and architecture, Mr. J. Walker Smith; C, domestic hygiene, Mrs. Edwin Gray; D, hygiene of infancy and childhood, Mrs. M. Scharlieb; E, industrial hygiene, Sir Thomas Oliver; municipal representatives, the Lord Mayor of York, Mr. Ald. N. Green; medical officers of health, Prof. A. Bostock Hill; engineers and surveyors to county and other sanitary authorities, Mr. A. F. Greatorex; veterinary inspectors, Prof. J. R. U. Dewar; sanitary inspectors, Mr. T. G. Dee.

In another part of the present issue an account is given of grants which the Development Commissioners have made for forestry instruction and investigation in connection with the University of Edinburgh and the Edinburgh and East of Scotland Agricultural College. The Commissioners have granted the University a sum of 4500*l.* toward the erection of a new forestry building, 2000*l.* toward the equipment of the museums and laboratories, and 500*l.* a year for five years for an additional lecturer and assistant. In addition, the University and the Agricultural College have been promised conjointly an annual sum, for a period of years, for the rent and upkeep of a forest garden and an area of experimental plantations. We are glad that the claims of forestry and agriculture are receiving such generous treatment from the Commissioners. When the British Science Guild urged these claims upon the Board of Agriculture not very long ago, little consideration was given to the strong case then presented. The practical assistance now being afforded by the Development Commissioners to various departments of agricultural education and research suggests that the Guild's efforts to promote the advancement of scientific agriculture have not been in vain.

The second Mendeléeff Congress of Pure and Applied Chemistry and Physics will be held in St. Petersburg on December 21–28 (January 3–10). These congresses were originated by the Russian Physico-Chemical Society as a suitable means of perpetuating the memory of Mendeléeff and other notable Russian chemists, and are organised by the society; the first congress was held in 1907. Anybody interested in chemistry and physics may become a member by paying a fee of five roubles. The executive committee of the present congress consists of about fifty members; its president is Prof. Borgman, and vice-president, Prof. Favorski (the honorary president, Prof. Beketoff, died on December 1). Local committees have been formed in twelve towns. The following are the sections and subsections of the congress:—(1) pure chemistry; (2) technical analysis; (3) metallurgy and metallography; (4) applied electrochemistry; (5) cement and glass;

(6) pharmaceutical, forensic chemistry, and bromatology; (7) biological and agricultural chemistry; (8) hygiene; (9) pure physics; (10) geophysics; (11) seismology; (12) astrophysics; (13) applied physics; (14) wireless telegraphy; (15) aërodynamics; (16) methods of teaching physics and chemistry. The meetings will be (*a*) sectional; (*b*) several sections combined; (*c*) general, where reports on the recent progress of chemistry and physics will be read. Up to the present time eight general reports and about seventy papers for the sectional and united meetings have been announced. Many excursions to the institutes and colleges of St. Petersburg, and to chemical and engineering works, have been arranged; there will be also an exhibition of new chemical and physical apparatus. Some hundreds of members from all parts of Russia have already announced their intention to attend themselves, and their numbers, owing to the attractions of the capital, will probably be as large as at the first congress.

THE council of the London School of Tropical Medicine has decided to establish a journal in connection with the school. Three parts are to appear each year, and part i. has just been issued. Sir Patrick Manson writes a foreword; original papers are contributed by Drs. Bayon, Daniels, Hutton, Leiper, Minett, and Wise; and surveys of recent literature on tropical medicine and reviews of books complete the matter.

A SERIES of studies of the motions of flagella of microscopic organisms observed by means of the ultra-microscope is contributed by V. Ulehla to the *Biologisches Centralblatt* (xxxi., Nos. 20–23). Interesting observations have been made on monads, bacteria, algæ, Euglenia, &c. In some cases when two flagella are present one revolves round the other. A classification of types of flagella and of flagellar movement is given.

THE report on the health of the Army for the year 1910, recently issued, contains matter of much interest. The health of the troops at home and abroad was better last year than ever before, and this applies to the admissions to hospital, deaths, invalids sent home, and the constantly sick; only in invalids finally discharged is there a fractional rise. Loss or decay of many teeth has caused the largest number of rejections of intending recruits, and venereal disease accounts for the largest number of the total inefficiency from sickness. In the Mediterranean stations there were only two admissions for Mediterranean fever in Gibraltar and one in Malta (out of an average strength of 6769), the latter a young officer just arrived who drank unboiled milk, probably goat's milk. There was an increase in malaria in Jamaica and West Africa, and a diminution in India, over the average for the previous five years. Venereal and tuberculous diseases have almost everywhere decreased as compared with the average of the previous five years, and there has been a welcome and remarkable diminution in enteric fever among the European troops in India.

THE second part of vol. ii. of the Museum Journal of the University of Philadelphia is devoted to a survey of New Zealand culture, based on the great collection made by E. W. Clark, the most important addition contributed in recent years to the museum. It includes splendid specimens of wood-carving, tail pieces of canoes, house posts, paddles, wooden staves, dancing clubs, and wooden boxes. In addition, we have clubs of polished whalebone, a chief's club in green jade, and a good example of the Heitiki, recognised by Captain Cook and other early travellers as the characteristic personal ornament of the Maoris. It is much to be regretted that this remarkable collection has not found a home in one of our imperial or colonial museums.

MR. C. B. MOORE, in a paper entitled "Some Aboriginal Sites on Mississippi River," contributed to vol. xiv., part iii., of the Journal of the Academy of Natural Sciences, Philadelphia, describes a number of Indian burial mounds along the course of the river. It is well that this survey has been undertaken, because many of these monuments are being destroyed by changes in the course of the stream or by agricultural operations. The discoveries throw little light on the age of the makers or on their death cult. The pottery is interesting, particularly some representations of animals like the tortoise and raccoon, and some human figures are represented sitting cross-legged, a very unusual position in the statuettes discovered in this region.

IN *The National Geographic Magazine* for November, Mr. J. E. Pogue, of the United States National Museum, describes the remarkable "Rainbow" bridge of natural formation in the Navaho reservation near the south-east corner of Utah. This towering arch, of rainbow shape, spans the canyon, the geological formation of which is a buff-coloured, fine-grained sandstone, brick-red on its surface and stained with vertical streaks of a darker shade. It hangs 309 feet above stream-bottom, and the abutments stand 278 feet apart. The causeway, upon which an observer can be lowered from an adjacent cliff, the sides of which are too steep to admit easy passage, is 33 feet wide by 42 feet thick at the keystone point. These figures, however, give only a faint idea of the majestic symmetry of this remarkable structure. It was visited by white men for the first time in 1909. It is satisfactory to learn that the United States Government has constituted it a national monument, and has taken adequate measures for its preservation.

THE Schweich lectures on Biblical archæology, held under the auspices of the British Academy, were delivered last month by Prof. R. A. Stewart MacAlister, late director of excavations of the Palestine Exploration Fund, who discoursed on the "Philistines, their History and Civilisation." Prof. MacAlister dwelt on the earliest known history of the Philistines, on their supposed origin in Crete, and on their raid into Egypt. The earliest references to them in the Old Testament, and details of the capture of the Ark and of its wanderings among the people, were given. The lecturer traced the growth in power of the Philistines during the reign of Saul, referring to the outlawry of David and to his relations with the King of Gath, and also to the battles between David and the Philistines. By these battles their power was broken, and they almost disappear from the Biblical records. Facts relating to them contained in the Assyrian records from the eighth and seventh centuries B.C., and instances of their traditions among the modern peasants of Palestine were given. Referring to the political and military organisation of this people, Prof. MacAlister stated that they had the oldest form of oligarchic government on record. At present we are very ignorant of their language, only a few proper names and some doubtful words being known. But little has been ascertained of their religion, the two chief deities being the fish-shaped goddess Atargatis and the god Dagon; the cult of this latter deity long survived in Gaza, where he was worshipped under the name Marna. As to the arts, they had reached a comparatively high level; witness the various jewels, pottery, and bronze mirror which were found in the five tombs recently discovered at Gezer. It is probable, indeed, that the alphabet was developed out of the Cretan linear script by this people.

A large portion of vol. cxx., part vi., of the *Sitzungsberichte der k. Akad. der Wissenschaften* is occupied by a continuation of the accounts of the results of a recent survey of the plankton of the Adriatic. In the first paper Dr. A. Steuer discusses the amphipod crustaceans, describing a new species of Glossocephalus. The same naturalist also undertakes the stomatopod crustaceans and pteropod molluscs, while the tornarian and actinotrochan larvæ fall to the share of Dr. G. Stiasny.

According to the report of the trustees for the year 1910–11, the details of the reorganisation of the Indian Museum have been worked out during the period under review, and the various sections of the collection handed over to the officers who will in future be respectively responsible for their preservation. Owing to the appointment of two additional officers, special progress has been made in the zoological section, both in regard to the arrangement and display of the exhibition series and in original research.

In *The Zoologist* for December, 1911, Colonel C. E. Shepherd continues his account of the pharyngeal teeth of fishes, dealing in this instalment with those of the sea-breams (Sparidæ) and wrasses (Labridæ). Many members of each group feed on hard-shelled molluscs, and therefore require special crushing apparatus. Sea-breams effect this by the development of powerful molar-like teeth in the front of the jaws, and consequently require nothing special in the way of pharyngeals. The wrasses, on the other hand, rely solely on their pharyngeal dentition, of which the lower series forms a large plate resembling a cobbled road in miniature, while the upper is divided into two somewhat similar lateral patches.

The distribution chart of a plant species serves not only to point out the areas occupied, but often throws light on its origin. These matters are discussed by Dr. C. H. Ostenfeld in a short pamphlet, with reference to seven species of Anemone, Hepatica, and Pulsatilla. It is unexpected to find that *Anemone nemorosa* does not extend to the western shores of Jutland, but, as would be expected, it grows further westward than *A. ranunculoides* and *Hepatica triloba*, which do not extend to the Atlantic coast nor yet to Great Britain. A curious feature is the mutually exclusive distribution of *Pulsatilla vulgaris* and *P. pratensis*. All the seven species are considered to be post-Glacial immigrants from the south.

The biometrical investigations on the egg of the domestic fowl, carried out during the past four years at the Maine Agricultural Experiment Station, have necessitated the designing of methods for the accurate measurement of the whole or parts of eggs. These are collected in a recent report by M. R. Curtis, and will be found useful by others working at the same subject. It is considered that the methods possess a considerable degree of accuracy, while at the same time they have the advantage of simplicity of manipulation.

The third report on the experimental work of the Sugar Experiment Station, Jamaica, shows continued progress in several directions. The station was not popular at first, but has gradually gained the confidence of the planters because of the valuable results it has been able to achieve. Manurial trials have demonstrated that on many of the island soils phosphates are not required, but nitrogenous and potassic manures are effective and profitable in seasons of normal rainfall, though not in dry years. New varieties of cane have been brought out considerably better than those formerly grown. The fermentation problems connected with the production of rum are being successfully investigated by Mr. Ashby, who has selected certain yeasts of high efficiency and sent them out in pure cultures to the estates, in most cases with very satisfactory results.

The November (1911) number of *Petermann's Mitteilungen* contains the numbers of families in different provinces of China according to the official report of the recent census of the Empire. For Peking and some districts the number of individuals is also given.

La Géographie for December, 1911, announces that, in consequence of the misunderstandings caused by the old datum of Bourdalouë being still used in some river systems when giving flood warning instead of the mean sea-level at Marseilles, the Ministry of Public Works has ordered that, within five years, all bench-marks must be referred to the normal datum of mean sea-level at Marseilles.

A short account of the work of the Norwegian expedition which visited Spitsbergen last summer to continue the topographical and geological surveys which had been carried on in previous years is given by M. A. Hoel in the October (1911) number of *La Géographie*. Photogrammetric methods were largely employed, on account of the short time which was available. In spite of much unfavourable weather, the work accomplished enabled a very complete topographical map to be drawn of the region between Ice Fiord and Bell Sound, as well as a general geological map of the quadrilateral formed by the north and south sides of the Spitsberg, Wijde Bay, and Ice Fiord.

In the December (1911) number of *The Geographical Journal* Captain Rawling gives some information bearing on the geological structure of that part of Dutch New Guinea which he traversed, supplementing that brought back by Dr. Lorentz, who penetrated to the ridge of the main chain further to the eastward. A summary is given of the explorations of Mr. E. C. Abendanon in the Central Celebes. During 1909 and 1910 he travelled extensively in this island, and succeeded in throwing considerable light on its geology. While the southern peninsula was found to be a folded region with regular folds running in a general north-west direction, there is no pronounced folding in the south-eastern peninsula. A large number of altitudes were determined, and the results obtained are considerably lower than earlier observations had indicated.

Symons's Meteorological Magazine for December, 1911, contains the fourth and concluding part (winter) of Mr. W. Sedgwick's interesting notes on the weather of the seventeenth century, from information given in the diaries of Evelyn and Pepys (see Nature, November 11, 1911). For this period (December–February) the observations are more complete than for the other seasons. The recorded instances of snow are surprisingly few, being only mentioned in thirteen winters in the period covered by the diaries (1648–1703), and only three of these falls appear to have been exceptional. Prolonged or severe frosts occurred in about ten of the winters; that of 1683–4 (" Frost Fair ") far surpassed any within living memory; coaches plied to and fro on the Thames as in the streets, and the severe weather extended even so far south as Spain. At least eleven very mild or wet winters occurred in Evelyn's lifetime. In short, the author concludes, when all the information is considered, it does not appear that cold winters were more frequent, or mild winters less so, than they have been in the last fifty years, or that the average severity of the winters was greater than at the present time.

WE have received an interesting little booklet from the Silent Electric Clock Company, of 192 Goswell Road, with which is embodied the firm's latest catalogue and price-list. This booklet is worthy of notice, for it differs widely from the ordinary run of price-lists, inasmuch as it contains a complete description of this firm's system, a system which is based upon more than sixteen years' experience of a class of apparatus which the Silent Electric Clock Company has apparently brought to a wonderful degree of perfection, judging from the list of more than eighty recent installations which have been supplied, no doubt much to the satisfaction of the users, amongst which we notice several British, colonial, and foreign Government departments, home municipalities, schools, and railway companies. It is interesting to observe that every department of time-keeping is provided for: large and small clocks; turret clocks; clocks for use on shipboard, with automatic adjustments for diurnal longitudinal correction; clocks arranged to strike and chime electrically, both for household as well as for public installations; and also for ringing bells according to variable programmes; high-grade astronomical clocks, and master clocks arranged for automatic synchronisation by means of the daily signal distributed by the Post Office Telegraph Department from Greenwich Observatory. Any of our readers interested in electric clock systems should certainly send an inquiry to this firm.

DURING the spring and summer of 1910 the United States Naval Wireless Laboratory carried out an extensive series of experiments on the range of communication by wireless telegraphy between two cruisers and the Brant Rock station, near Boston. An account of the work done and the results obtained is given by Mr. L. W. Austin in the October (1911) number of the Bulletin of the Bureau of Standards. The antenna of the Brant Rock station was 420 feet high, and of the umbrella type; those of the cruisers were 116 feet, and of the flat top type. In each case the coupling between closed circuit and antennæ was loose enough to cause only one wave to be emitted. Over salt water the received currents are proportional to the sending currents and to the product of the heights of sending and receiving antennæ divided by their distance apart and by the wave-length used. In addition, they are subject to absorption, which in the daytime is expressed by multiplying the above by e^{-ad}, where d is the distance and a a constant the value of which varies inversely as the square root of the wave-length. During the night the absorption is too irregular to be represented by any formula. The above statements have been tested over the following ranges:—sending currents, 7 to 30 amperes; antennæ heights, 37 to 130 feet; wave-lengths, 300 to 3750 metres; distances up to 1000 miles.

Engineering for December 29, 1911, contains an illustrated description of a floating crane of exceptional size which is now in use at the Austrian Naval Dockyard, Pola, on the Adriatic. The crane is designed to deal with the heaviest weights in ship construction, and also, on an emergency, to raise sunken submarines. According to the specification, the crane had to be provided with two crabs, each having a lifting capacity of 120 tons, the crabs being so designed that both could be used simultaneously, especially for the lifting of submerged loads, in which case the rear crab has to work at a maximum distance of 5 feet from a line corresponding with the front edge of the pontoon, the front crab being close against it. Arrangements are made whereby the submarine can be raised sufficiently out of the water for rescuing the crew through the conning tower, when the necessary steps could be taken with more leisure for salving the submarine itself. The crane can be propelled afloat at a speed of about 3·4 knots. Under test, each crab was made to carry a load of 150 tons, the rear crab being at a distance of 5 feet, and the front crab at a distance of 47 feet 7 inches, from a line corresponding with the front edge of the pontoon.

IN chapter xxxix. of his "Study of Bird Flight"—which is now appearing serially in the pages of *Flight*—Dr. E. H. Hankin discusses the cause of soaring flight. Two ancient theories are examined and rejected, *i.e.* that the soaring bird takes advantage of (1) ascending currents reflected upward from the walls of high buildings, &c.; (2) ascending currents or eddies caused by heat; for the reason, in the first instance, of personal observation to the contrary in the case of heavy birds, and, in the second, that soaring can in some conditions be impossible in the presence of heat eddies as well as in their absence, and *vice versa*. "There is no evidence whatever," says Dr. Hankin, "in favour of the view that the energy of soaring flight is derived from the kinetic energy of air in movement independently of the bird's wing." The conclusion drawn is that the energy used in soaring is stored up in the air in potential form, for which he coins the word "ergaer." On the question of the composition and decomposition of "ergaer," our author admits he knows nothing, but defends his theory as entirely scientific, merely advancing the opinion that "ergaer" is stored sun energy, and that "the air under the wing of a soaring bird is undergoing a change of the nature of a sort of continuous explosion." Later in the development of the idea we are asked to suppose a bird gliding into a patch of soarable air with its wings at full camber. In these conditions, the "pull" would no longer act at the centre of gravity and would no longer be the momentum, but would change to the tractive effect of soarable air on the cambered wing, and so would act on a level with the wings.

A COPY of the January issue of his catalogue of second-hand instruments (No. 49) has been received from Mr. C. Baker, 244 High Holborn, London. The list contains particulars of nearly 2000 items, the majority of which will interest the astronomer and the microscopist. The instruments are guaranteed to be in adjustment, and are for sale or hire.

THE twenty-eighth annual issue of "The Year-book of the Scientific and Learned Societies of Great Britain and Ireland" has now been issued by Messrs. Charles Griffin and Co., Ltd. This useful work of reference is a record, compiled from official sources, of the work done in science, literature, and art during the session 1910–11 by numerous societies and Government institutions. It is to be regretted that the summary of the proceedings of the British Association, given on pp. 10 to 23, refers to the Sheffield meeting held in September, 1910, and not to the Portsmouth meeting of last year. Since the whole of the titles of papers, reports, &c., presented at the Portsmouth meeting were available before the middle of September last, we suggest they might with advantage have been included, in addition to those relating to the 1910 meeting.

Errata.—The paper on "Momentum in Evolution" published in last week's NATURE was by Prof. Dendy, and not Den*ny*, as printed on p. 301.—We are asked to state that on p. 296, col. one, line ten, "a rubber ram" should be "an iron ram." The former words were given in the manuscript supplied to us, and were passed in proof by our contributor.